

FIGURE 1

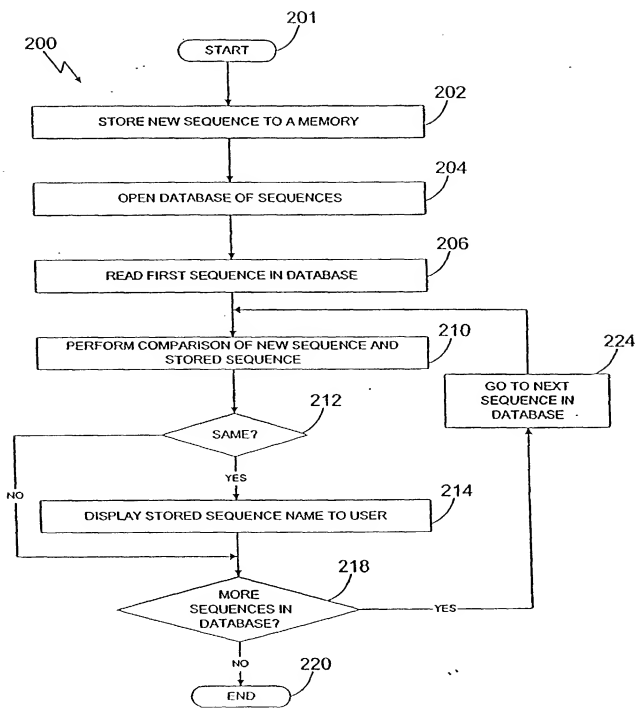
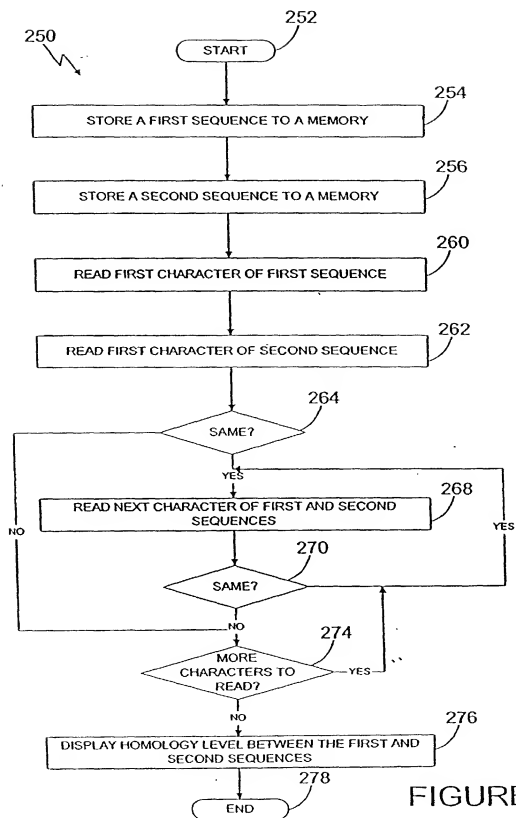


FIGURE 2



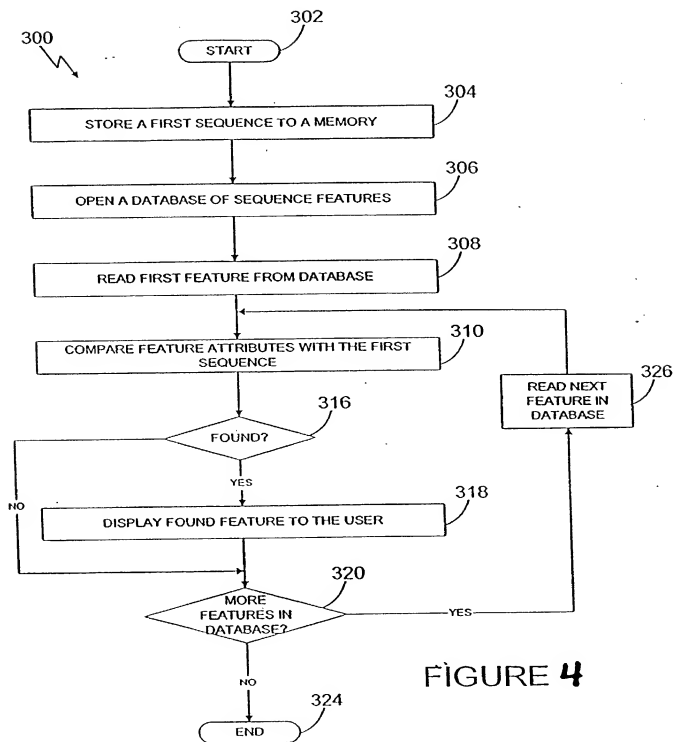
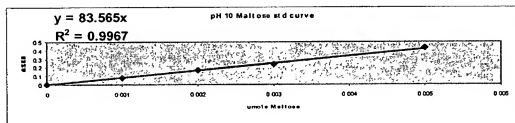


FIGURE 4

Figure 5: Example Standard Curve of the assay of Example 2.



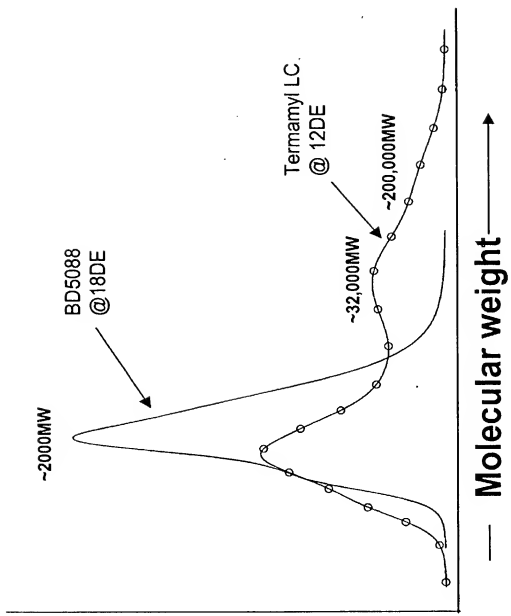


FIGURE 6a

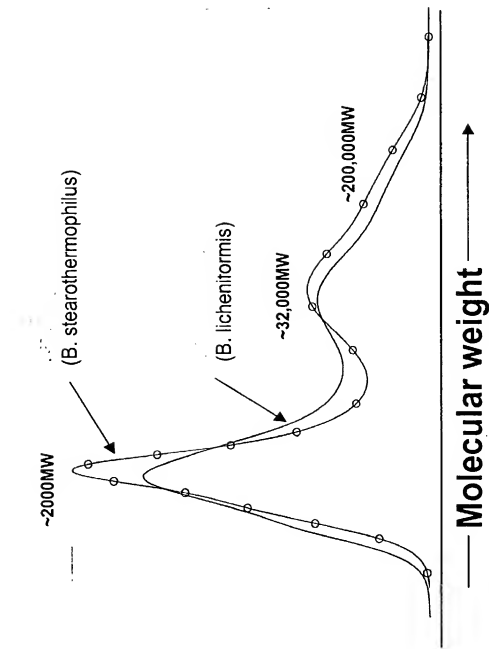


FIGURE 6b

Figure 7:

SEQ ID NO:1

atggccaagtactccgagctgggaaaggcggggtcataatgcaggcgttctactgggagctgcttcaggagggaatatgggtgggacacaat
 acggcgaagaataccggagtggtgatgcgggaattccgcaatatggattccccggcgagcaaggcgatggcgccgcttctgatg
 ggctacgacccctacgactctttgacctgggtgagtacgaccagaagggaacggtagagacgcgctttggctccaaaggagagctgtgaa
 catgataaacaccgccccacgctatggcatgaaggtaatgccgatatagtcatcaaccaccgcgcggcggtgacctgggtgggaacccctt
 cgtagaacgactatacttgaggcagcttctcaaaaggctgcgtcgggtaataacaggccaaactacctcgacttccaccgaacgagctccatgc
 ggccgactccggaaacattgggagctatccgacatagccacgcaaaagagctgggaccagtactggctctggcgccagccagcagagctac
 gggcgatatctcaggagcatcggcactgatgcctggcgcttcgactacgtcaagggtgatgctcctgggtgtcaaggactggctgaactggt
 ggggagggctggcggttggagagtactgggacaccaacgtcgcagctgtcttcaactgggcaatactcagagggtggccaaggcttttgacttcg
 cctctactacaagatggatgaggcctttgacaacaaaacattccagcgctcgtctcgtcccttcagaacggccagactgtttgtctcccgacg
 ccgttcaaaggccgtaacctttgtagcaaacacgacacgataatactggaaacagtatccagcctacgcgttacctctaccctacgagggcg
 agccgcaaatattctaccgcgactacgaggagtggctcaacaaggataagctcaagaacctcatcttgatataatgaacacctcggcgaggga
 agcaccgcacatgctactacgataacgatgaactctctctgcaggaaaggctacggggacaaagcggggcttataacctacatcaaacctag
 gctcgcgaacggccgggaagggtgggtttatgtgcgaagttcgcggcgctgcatccacgagtatactgttaacctcggaggtggttagac
 aagtactgtctactcaaggcggtgggtctatctcgaagctccagcttagaccctgccaacgggcagataggctactcctgggtggagctatgcg
 ggggtggcgctga

SEQ ID NO:2

Met Ala Lys Tyr Ser Glu Leu Glu Lys Gly Gly Val Ile Met Gln Ala Phe Tyr Trp Asp Val Pro Ser
 Gly Gly Ile Trp Trp Asp Thr Ile Arg Gln Lys Ile Pro Glu Trp Tyr Trp Ala Gly Ile Ser Ala Ile Trp
 Ile Pro Pro Ala Ser Lys Gly Met Gly Gly Ala Tyr Ser Met Gly Tyr Asp Pro Tyr Asp Phe Phe Asp
 Leu Gly Glu Tyr Asp Gln Lys Gly Thr Val Glu Thr Arg Phe Gly Ser Lys Gln Glu Leu Val Asn
 Met Ile Asn Thr Ala His Ala Gly Tyr Met Lys Val Ile Ala Asp Ile Val Ile Asn His Arg Ala Gly Gly
 Asp Leu Glu Trp Asn Pro Phe Val Asn Asp Tyr Thr Trp Thr Asp Phe Ser Lys Val Ala Ser Gly Lys
 Tyr Thr Ala Asn Tyr Leu Asp Phe His Pro Asn Glu Leu His Ala Gly Asp Ser Gly Thr Phe Gly Gly
 Tyr Pro Asp Ile Cys His Asp Lys Ser Trp Asp Gln Tyr Trp Leu Trp Ala Ser Gln Glu Ser Tyr Ala
 Ala Tyr Leu Arg Ser Ile Gly Ile Asp Ala Trp Arg Phe Asp Tyr Val Lys Gly Tyr Ala Pro Trp Val
 Val Lys Asp Trp Leu Asn Trp Trp Gly Gly Trp Ala Val Gly Trp Tyr Trp Asn Val Asp Ala
 Val Leu Asn Trp Ala Tyr Ser Ser Gly Ala Lys Val Phe Asp Phe Ala Leu Tyr Tyr Lys Met Asp Glu
 Ala Phe Asp Asn Lys Asn Ile Pro Ala Leu Val Ser Ala Leu Gln Asn Gly Gln Thr Val Val Ser Arg
 Asp Pro Phe Lys Ala Thr Phe Val Ala Asn His Asp Thr Tyr Trp Asn Lys Tyr Pro Ala
 Tyr Ala Phe Ile Leu Thr Tyr Glu Gly Gln Pro Thr Ile Phe Tyr Arg Asp Tyr Glu Glu Trp Leu Asn
 Lys Asp Lys Leu Lys Asn Leu Ile Trp Ile His Glu Asn Leu Ala Gly Gly Ser Thr Asp Ile Val Tyr
 Tyr Asp Asn Asp Glu Leu Ile Phe Val Arg Asn Gly Tyr Gly Asp Lys Pro Gly Leu Ile Thr Tyr Ile
 Asn Leu Gly Ser Ser Lys Ala Gly Arg Trp Val Tyr Val Pro Lys Phe Ala Gly Ala Cys Ile His Glu
 Tyr Thr Gly Asn Leu Gly Trp Val Asp Lys Tyr Val Tyr Ser Ser Gly Tyr Trp Tyr Leu Glu Ala
 Pro Ala Tyr Asp Pro Ala Asn Gly Gln Tyr Gly Tyr Ser Val Trp Ser Tyr Cys Gly Val Gly

SEQ ID NO: 3

atgtctcgtctcgctgttttgcactgcctcgtctgttctgcccaacaggacagcccgccaaggctgccgaccgtttaacggccacctgatgca
 gtattttgaatgtacttgcggatgatggcagctgttatggaccaaaatggccaatgaagccaacactatccagccttgcacacgctcttgg
 gctgccgccgcttacaagaaggaacggcgcagcgacgtagggtacggagatatacagcttgtatgacctggcgaaatcaatcaaaaaggga
 ccgtccgcacaaaatcggacaaaangctcaatcttcaaggcaattcaacggcccaacgcgcgtggaaatgaagtgtacgccgatgtcgtgtt
 cgacataaaggcgccgctgcaggcgacggaatgggtggagccgcgtcgaagtcaatcgctccgaccgaaccaagaatctcgggcacat
 caaatccaagcatggacgaatttgatttcccgggcgggggcaacacttaccagctttaaaggcgctgtgtaccattttgacggcggttatgg
 gacgaaagcgcaaaatfgagcgcgattacaattccggcgctcggcaagcggtgggattgggaatgacacggaaacggaaactatg
 actacttaatgtatgcgaccttgatatggatctccgaagctgtgacgagctgaanaactgggggggaaatgtgtatgtcaacacaaacgact
 gatgggttccgcttgatgccgtcaagcatataaattcagtttttttctgattggtgtcgtatgtcgttcagagctggcaagcgctatttaccg
 tcgggggaatatggagctatgacatcaacaagtgtgcacaaattacattcgaanaacagacgggaacgatgtctttgtttgatgccccgttacaaca

aatlttataccgcttccaaatcagggggcgcatgttgatagcgcacgttaatgaccaatactctcatgaaagataaccgcacattggccgcacctt
cgttgataatcatgacaccgaaccggcgaagcgctgacgtatgggtcgaccatgggttcaaacctgttgcttacccttatttcaactcggc
gcgaaggatacccgctgcgtctttaaagggtacattatggcattccacaataataacattccgttcgtgaaaaacaaatgacgcgtctcatcgc
gcgcaggagattgctcttaccgaacgcacatcatcttgatcatctccgacatcatgggtgggacgggaaggggacgttgcactgtaaaacacgg
atccgggctggccgcactgatcccgatggggcgggaaggacaaatggatgactgttgggcaaacacacgctggaaaaagtgtctatga

SEQ ID NO: 4

atgaaacacacaaaaggctttacgcccgattgctgacgctgttattggcgtcatcttctgtccctattctgcagcagcggcgcaaatctta
atggagcgtgcatgagattttgaatggatcatgcccaatgacggccaacalttgaagcgttgcgaaacgcactggcatatgggtgaacac
ggatattactgcgcttggattccccggcataataagggaacgagcgaagcggatgtgggclacgggtgcttaccgacctttatgattgaaggagttt
catcaaaaaaggcaggttcggacaagtacggcacaanaaggagagctgcaatctgcatcaaaaagtcttcaatccccgcacataacgtttacg
gggatgtggctacacacacaaggcgcgctgatgcgaccgaagtatacccgcggttgaaatcgatcgatccgtgacgcgaaccgcgtaatt
tcaggagacacccgaattaaagccttgacacattttcatcttccggggcgcgcgacacatagcgaattttaaagtgcattgtgacacatttgc
ggaaaccgattgggacgagctccggaagctgaaccgcatctataaatttcaaggaaaggcttgggaatttccaatgaaagggcgcaac
tatgatatttgatgatgccgacatcgattatgacatcctgatgtgcgcagcagaataaagagatggggcacttggtatgccaatgaactgcaatt
ggcaggtttccgctctgatgctgcaacacattaaatttcttttgggggatgggttaatcatgtcagggaaaaaacgggggaaggaaattgta
cggctgatgaatttgcgaagtacttggcgcgctgggaaacattttgaacaaaacaaatttcaatcattcagtttgacgtccgcttcaatt
cagttccatgctgcatcgacacaggagggcggtatgatatggagaatttgcgaacggtacggctgttccacgacccctgttgaagcgggtta
cattgtcgataaccatgatacagcggggcaatcgcttgagcgaactgtcacaacatggtttaagcgcgttgctgactcgttcaattccacaa
ggaatctggataaccctcaggttttctacggggatgatgtgcagcagaagggagactcccgcgaattctcgttgaacacaaaattgaa
ccgatctaaaaagcgaaaaaacagtatgctgacgagcagacagcagattatctgacacacatgacattgtcggctggacaaagggaaggcgac
agctcgttgcgaatttcaagggttggcgcatgataaacaagcggacccgggtggggcgaagcgaaatgtatgtcggccggcaaacccgctgac
gacatggcatgacattaccggaaccgttggagcgggtgtcatcaattcggaagcgtgggaagaggttaccagtaaacggcggtcgtttca
atttatgttcaagaatga

SEQ ID NO: 5

gtgtgcatatgaagtgaagtaccttgccttagttttgttgcttggtcttccatagggcctactctcgaactcagttgggtgctgccaagtactccg
aacctgaagaggcggtgttataatcagggcctctctacgggaatttcccggaagggggaactcgtgttgggacacacataagacagaaaatcccg
gagtgctacgacgtcggaatctcgcgatatgtgattctccagctagcaaaagggatggcgcggtgttattccatgggctacgatccctacgatt
ctttgaccttcggagtagtactatcagaagggaacagttgagacgcgcttccgctcaaggaggaaactgtgacatgataaacacccgcacact
ctatggcataaagggtgatagcggacatagctataaacacacgcgcgggtggagacattgagtggaacccctttgataaacacataacttgga
gacttccaaaggctgcctccggtaataacacggccaactacctgacttccaccaaacgaggtcgaagtctgcgcatgagggtacatttggtga
ctttccggacatcgccacgagaagagctgggatacgtactgctctgggcaagcaatgagagctacgccgcatatctccggagcatgga
ctgatgatgctgggttccgactacgtcaaaaggcttggagcgtgggtgttgaatgactggctcagcttggggggggggcggttggagagga
ctgggacacgaacgattgactgacclcttacttgggcatacgacacgggttgcgaaggcttcttgacttcccgctactactacaagatggagcaagcc
ttgacaacaccaaactcccgcttgggtttacggcctcagaacggaggaacagctgtttcccgcgatcccttcaagggaatgaatttcgttgc
aacacacgatacagataaacttggacaacatgctcggcttatgctgttacccttaactatgagggaacagcctgttatattttaccgcgactacgagg
agtggtcccaacaggataaactctaaacaccttctgatacagcagacacttgcggaggaagtacaaagatccctactacatgataacgatga
gctaatattcatgagggaaggctacgggaacgaacggcggtctataacctactataaacctcggaaacgactggcgccgacgctggttgaa
gtcggctcaagtttgcggctacacaatctatgaatacagggcaactcgggtgggtgacaggtgttgatgacgatgattgggtta
aacatgcgcacccctctatgatacccaacggatattacgctactcgtgacgtacgacagggctcggatga

SEQ ID NO: 6

atgaagaagtgttgcgcctgttctataacatgttttctgtagtgagatggcagctggtgcacagccagctagcgccgaaagtattccgagctc
gaagaaggcgcgcttataatcagggccttactgggacgtccaggttggaggaactcgttggggacacacatcagggaagaataccggaggt
gtgtacgagcgggaatctgcgcaatttggattctccgacgacgaagggaatgagcggcggttatctgcatgagggctacgatccctacgtatttt
tgaccttcggaggtacacacgaaggaagggaacatcgaacacgcgcttggctttaaagcagctcactcaatgataaacacggccatccta
cggcataaaggatcatgaggacatgtcataaacacacgcgagggagacactgagtggaacccgttgggtgggactacacactgagc
gacttcaaaagggtgcctcgggcaaatatactgccaactactcgaacttcaaccccaacaggtgcaagtgtgtgacgagggcacatttggag
gcttccagacatagccacgagaagagctgggacacgacactggcttggcgagcgatgagagctacggcgtacttaaggagcatcg
cggttgatgcttggcgttggactgtagaagggtacggagcgtggctgtgctgacaggaactggctcactggttggggcgcgctggccgttggc

gagtaactgggacaccaacgttgatgcactctcaactgggcctactcgagcggcgccaaggtcttcgacttcccgcctactacaagatggatg
 aggcctttgacacaaaaaacctccagcgcctcctctgccctcagaaacggccagactgttctcccgcgaccgttcaaggccgtacccitt
 gtacgaaacacgacacgatataacttggacaacgtacctgttctgtcttccactcaccacgaaggccagccgcctatattaccgcgac
 tacgaggagtggtctcaacaaggacaggttgaacaacctcatatggatcacgaccacctcgagggtgaagcagcagcatagtctactacga
 cagcgacgagatgatctctgtgaggaaacggctatggaagaacgctggccttataacttaccacccctggctcgagcaagggttggaaaggtg
 gggttatgtgcggaagtcgcggcgctgcactccagagtatactggtaacctcggaaggctgggtagacaaagtacgtctactcaagcggctg
 ggtctatctcgaagctcagctacgacccctgccaacggcgagatggtactcctgttgagctattgcneggtgttgggtga

SEQ ID NO: 7

Met Phe Leu Leu Ala Phe Leu Leu Thr Ala Ser Leu Phe Cys Pro Thr Gly Gln Pro Ala Lys Ala Ala
 Ala Pro Phe Asn Gly Thr Met Met Gln Tyr Phe Glu Trp Tyr Leu Pro Asp Gly Thr Leu Trp Thr
 Lys Val Ala Asn Glu Ala Asn Asn Leu Ser Ser Leu Gly Ile Thr Ala Leu Trp Leu Pro Pro Ala Tyr
 Lys Gly Thr Ser Arg Ser Asp Val Gly Tyr Gly Val Tyr Asp Leu Tyr Asp Leu Gly Glu Phe Asn Gln
 Lys Gly Thr Val Arg Thr Lys Tyr Gly Thr Lys Ala Gln Tyr Leu Gln Ala Ile Gln Ala Ala His Ala
 Ala Gly Met Gln Val Tyr Ala Asp Val Val Phe Asp His Lys Gly Gly Ala Asp Gly Thr Glu Trp Val
 Asp Ala Val Glu Val Asn Pro Ser Asp Arg Asn Gln Glu Ile Ser Gly Thr Tyr Gln Ile Gln Ala Trp
 Thr Lys Phe Asp Phe Pro Gly Arg Gly Asn Thr Tyr Ser Ser Phe Lys Arg Trp Tyr His Phe Asp
 Gly Val Asp Trp Asp Glu Ser Arg Lys Leu Ser Arg Ile Tyr Lys Phe Arg Gly Ile Gly Lys Ala Trp
 Asp Trp Glu Val Asp Thr Glu Asn Gly Asn Tyr Asp Tyr Leu Met Tyr Ala Asp Leu Asp Met Asp
 His Pro Glu Val Val Thr Glu Leu Lys Asn Trp Gly Lys Trp Tyr Val Asn Thr Thr Asn Ile Asp Gly
 Phe Arg Leu Asp Ala Val Lys His Ile Lys Phe Ser Phe Phe Pro Asp Trp Leu Ser Tyr Val Arg Ser
 Gln Thr Gly Lys Pro Leu Phe Thr Val Gly Glu Tyr Trp Ser Tyr Asp Ile Asn Lys Leu His Asn Tyr
 Ile Thr Lys Thr Asp Gly Thr Met Ser Leu Phe Asp Ala Pro Leu His Asn Lys Phe Tyr Thr Ala Ser
 Lys Ser Gly Gly Ala Phe Asp Met Arg Thr Leu Met Thr Asn Thr Leu Met Lys Asp Gln Pro Thr
 Leu Ala Val Thr Phe Val Asp Asn His Asp Thr Glu Pro Gly Gln Ala Leu Gln Ser Trp Val Asp Pro
 Trp Phe Lys Pro Leu Ala Tyr Ala Phe Ile Leu Thr Arg Gln Glu Gly Tyr Pro Cys Val Phe Tyr Gly
 Asp Tyr Tyr Gly Ile Pro Gln Tyr Asn Ile Pro Ser Leu Lys Ser Lys Ile Asp Pro Leu Leu Ile Ala Arg
 Arg Asp Tyr Ala Tyr Gly Thr Gln His Asp Tyr Leu Asp His Ser Asp Ile Ile Gly Trp Thr Arg Glu
 Gly Val Thr Glu Lys Pro Gly Ser Gly Leu Ala Ala Leu Ile Thr Asp Gly Pro Gly Gly Ser Lys Trp
 Met Tyr Cys Trp Gln Thr Arg Trp Lys Ser Val Leu

SEQ ID NO: 8

Met Lys Gln Gln Lys Arg Leu Tyr Ala Arg Leu Leu Thr Leu Leu Phe Ala Leu Ile Phe Leu Leu Pro
 His Ser Ala Ala Ala Ala Ala Asn Leu Asn Gly Thr Leu Met Gln Tyr Phe Glu Trp Tyr Met Pro Asn
 Asp Gly Gln His Trp Lys Arg Leu Asn Asp Ser Ala Tyr Leu Ala Glu His Gly Ile Thr Ala Val
 Trp Ile Pro Pro Ala Tyr Lys Gly Thr Ser Gln Ala Asp Val Gly Tyr Gly Ala Tyr Asp Leu Tyr Asp
 Leu Gly Glu Phe His Gln Lys Gly Thr Val Arg Thr Lys Tyr Gly Thr Lys Gly Glu Leu Gln Ser Ala
 Ile Lys Ser Leu His Ser Arg Asp Ile Asn Val Tyr Gly Asp Val Val Ile Asn His Lys Gly Gly Ala
 Asp Ala Thr Glu Asp Val Thr Ala Val Glu Val Asp Pro Ala Asp Arg Asn Arg Val Ile Ser Gly Glu
 His Arg Ile Lys Ala Trp Thr His Phe His Phe Pro Gly Arg Gly Ser Thr Tyr Ser Asp Lys Trp
 His Trp Tyr His Phe Asp Gly Thr Asp Trp Asp Glu Ser Arg Lys Leu Asn Arg Ile Tyr Lys Phe Gln
 Gly Lys Ala Trp Asp Trp Glu Val Ser Asn Glu Asn Gly Asn Tyr Asp Tyr Leu Met Tyr Ala Asp Ile
 Asp Tyr Asp His Pro Asp Val Ala Ala Glu Ile Lys Arg Trp Gly Thr Trp Tyr Ala Asn Glu Leu Gln
 Leu Asp Gly Phe Arg Leu Asp Ala Val Lys His Ile Lys Phe Ser Phe Leu Arg Asp Trp Val Asn His
 Val Arg Glu Lys Thr Gly Lys Glu Met Phe Thr Val Ala Glu Tyr Trp Gln Asp Leu Gly Ala
 Leu Glu Asn Tyr Leu Asn Lys Thr Asn Phe Asn His Ser Val Phe Asp Val Pro Leu His Tyr Gln Phe
 His Ala Ala Ser Thr Gln Gly Gly Tyr Asp Met Arg Lys Leu Leu Asn Gln Ser Thr Val Val Ser Lys
 His Pro Leu Lys Ala Val Thr Phe Val Asp Asn His Asp Thr Gln Pro Gly Gln Ser Leu Glu Ser Thr
 Val Gln Thr Trp Phe Lys Pro Leu Ala Tyr Ala Phe Ile Leu Thr Arg Glu Ser Gly Tyr Pro Gln Val
 Phe Tyr Gly Asp Met Tyr Gly Thr Lys Gly Asp Ser Gln Arg Glu Ile Pro Ala Leu Lys His Lys Ile
 Glu Pro Ile Leu Lys Ala Arg Lys Gln Tyr Ala Tyr Gly Ala Gln His Asp Tyr Phe Asp His His Asp

Ile Val Gly Trp Thr Arg Glu Gly Asp Ser Ser Val Ala Asn Ser Gly Leu Ala Ala Leu Ile Thr Asp
 Gly Pro Gly Gly Ala Lys Arg Met Tyr Val Gly Arg Gln Asn Ala Gly Glu Thr Trp His Asp Ile Thr
 Gly Asn Arg Ser Glu Pro Val Val Ile Asn Ser Glu Gly Trp Gly Glu Phe His Val Asn Gly Gly Ser
 Val Ser Ile Tyr Val Gln Arg

SEQ ID NO.: 9

Val Val His Met Lys Leu Lys Tyr Leu Ala Leu Val Leu Leu Ala Val Ala Ser Ile Gly Leu Leu Ser
 Thr Pro Val Gly Ala Ala Lys Tyr Ser Glu Leu Glu Glu Gly Gly Val Ile Met Gln Ala Phe Tyr Trp
 Asp Val Pro Gly Gly Gly Ile Trp Trp Asp Thr Ile Arg Gln Lys Ile Pro Glu Trp Tyr Asp Ala Gly Ile
 Ser Ala Ile Trp Ile Pro Pro Ala Ser Lys Gly Met Gly Gly Gly Tyr Ser Met Gly Tyr Asp Pro Tyr
 Asp Phe Phe Asp Leu Gly Glu Tyr Tyr Gln Lys Gly Thr Val Glu Thr Arg Phe Gly Ser Lys Glu Glu
 Leu Val Asn Met Ile Asn Thr Ala His Ser Tyr Gly Ile Lys Val Ile Ala Asp Ile Val Ile Asn His Arg
 Ala Gly Gly Asp Leu Glu Trp Asn Pro Phe Val Asn Asn Tyr Thr Trp Thr Asp Phe Ser Lys Val Ala
 Ser Gly Lys Tyr Thr Ala Asn Tyr Leu Asp Phe His Pro Asn Glu Val Lys Cys Cys Asp Glu Gly Thr
 Phe Gly Asp Phe Pro Asp Ile Ala His Glu Lys Ser Trp Asp Gln Tyr Trp Leu Trp Ala Ser Asn Glu
 Ser Tyr Ala Ala Tyr Leu Arg Ser Ile Gly Ile Asp Ala Trp Arg Phe Asp Tyr Val Lys Gly Tyr Gly
 Ala Trp Val Val Asn Asp Trp Leu Ser Trp Trp Gly Gly Trp Ala Val Gly Glu Tyr Trp Asp Thr Asn
 Val Asp Ala Leu Leu Asn Trp Ala Tyr Asp Ser Gly Ala Lys Val Phe Asp Phe Pro Leu Tyr Tyr Lys
 Met Asp Glu Ala Phe Asp Asn Thr Asn Ile Pro Ala Leu Val Tyr Ala Leu Gln Asn Gly Gly Thr Val
 Val Ser Arg Asp Pro Phe Lys Ala Val Thr Phe Val Ala Asn His Asp Thr Asp Ile Ile Trp Asn Lys
 Tyr Pro Ala Tyr Ala Phe Ile Leu Thr Tyr Glu Gly Gln Pro Val Ile Phe Tyr Arg Asp Tyr Glu Glu
 Trp Leu Asn Lys Asp Lys Leu Asn Asn Leu Ile Trp Ile His Glu His Leu Ala Gly Gly Ser Thr Lys
 Ile Leu Tyr Tyr Asp Asn Asp Glu Leu Ile Phe Met Arg Glu Gly Tyr Gly Ser Lys Pro Gly Leu Ile
 Thr Tyr Ile Asn Leu Gly Asn Asp Trp Ala Glu Arg Trp Val Asn Val Gly Ser Lys Phe Ala Gly Tyr
 Thr Ile His Glu Tyr Thr Gly Asn Leu Gly Gly Trp Val Asp Arg Trp Val Gln Tyr Asp Gly Trp Val
 Lys Leu Thr Ala Pro Pro His Asp Pro Ala Asn Gly Tyr Tyr Gly Tyr Ser Val Trp Ser Tyr Ala Gly
 Val Gly

SEQ ID NO.: 10

Met Lys Lys Phe Val Ala Leu Phe Ile Thr Met Phe Phe Val Val Ser Met Ala Val Val Ala Gln Pro
 Ala Ser Ala Ala Lys Tyr Ser Glu Leu Glu Glu Gly Gly Val Ile Met Gln Ala Phe Tyr Trp Asp Val
 Pro Gly Gly Gly Ile Trp Trp Asp Thr Ile Arg Ser Lys Ile Pro Glu Trp Tyr Glu Ala Gly Ile Ser Ala
 Ile Trp Ile Pro Gly Ala Ser Lys Gly Met Ser Gly Gly Tyr Ser Met Gly Tyr Asp Pro Tyr Asp Phe
 Phe Asp Leu Gly Glu Tyr Asn Gln Lys Gly Thr Ile Glu Thr Arg Phe Gly Ser Lys Gln Glu Leu Ile
 Asn Met Ile Asn Thr Ala His Ala Tyr Gly Ile Lys Val Ile Ala Asp Ile Val Ile Asn His Arg Ala Gly
 Gly Asp Leu Glu Trp Asn Pro Phe Val Gly Asp Tyr Thr Trp Thr Asp Phe Ser Lys Val Ala Ser Gly
 Lys Tyr Thr Ala Asn Tyr Leu Asp Phe His Pro Asn Glu Val Lys Cys Cys Asp Glu Gly Thr Phe
 Gly Gly Phe Pro Asp Ile Ala His Glu Lys Ser Trp Asp Gln His Trp Leu Trp Ala Ser Asp Glu Ser
 Tyr Ala Ala Tyr Leu Arg Ser Ile Gly Val Asp Ala Trp Arg Phe Asp Tyr Val Lys Gly Tyr Gly Ala
 Trp Val Val Lys Asp Trp Leu Asn Trp Trp Gly Gly Trp Ala Val Gly Glu Tyr Trp Asp Thr Asn Val
 Asp Ala Leu Leu Asn Trp Ala Tyr Ser Ser Gly Ala Lys Val Phe Asp Phe Pro Leu Tyr Tyr Lys Met
 Asp Glu Ala Phe Asp Asn Lys Asn Ile Pro Ala Leu Val Ser Ala Leu Gln Asn Gly Gln Thr Val Val
 Ser Arg Asp Pro Phe Lys Ala Val Thr Phe Val Ala Asn His Asp Thr Asp Ile Ile Trp Asn Lys Tyr
 Leu Ala Tyr Ala Phe Ile Leu Thr Tyr Glu Gly Gln Pro Val Ile Phe Tyr Arg Asp Tyr Glu Glu Trp
 Leu Asn Lys Asp Arg Leu Asn Asn Leu Ile Trp Ile His Asp His Leu Ala Gly Gly Ser Thr Ser Ile
 Val Tyr Tyr Asp Ser Asp Glu Met Ile Phe Val Arg Asn Gly Tyr Gly Ser Lys Pro Gly Leu Ile Thr
 Tyr Ile Asn Leu Gly Ser Ser Lys Val Gly Arg Trp Val Tyr Val Pro Lys Phe Ala Gly Ala Cys Ile
 His Glu Tyr Thr Gly Asn Leu Gly Gly Trp Val Asp Lys Tyr Val Tyr Ser Ser Gly Trp Val Tyr Leu
 Glu Ala Pro Ala Tyr Asp Pro Ala Asn Gly Gln Tyr Gly Tyr Ser Val Trp Ser Tyr Cys Gly Val Gly

SEQ ID NO: 66

atggctctggaagaggggcgcttataatgcaggcattctactggagcgtcccatgggaggaatctggfggggacagatagcccaagaat
 accgcattgggcaagcgccgggatttcggcgatatggattcccccgcgagcaagggtatgagcgccgtattgatgggtacgacctt
 acgattattttgacctcggtgagtactaccagaagggaacgggtggaacaagattcggctcaagcaggagctcataaaccatgaataaacaccg
 cccacgcctatggatgaaggtaataagcgcatatagtcataccaccgcgcggcgccgcatcttggagtggaacctctgtgaacgactata
 cctggaccgacttctcgaaggctgcgtcgggttaataacacggcccaactacctcgactccaccgaagacggtccaccgctggcgattccgga
 acatttggaggtatccgacatatgcacgacaagagctgggacacgactggctctgggccagccaggagagctacgcccgtatctcag
 gacactcggctatcgacgctggcgcttcgactacgtcaaggctatgctccctggctcgcaggagctgtgtaactgttggggagcgctgg
 cagttggagagactctgggacaccaacgtcgacgctgttctcaactgggcatactcgagcggtgcgaaggtcttctgacttgcctctactacaag
 atggacgagcccttgataacaacaacattccgcccctgggtgagcgccctcagatagcgccacagacagtgttcagccgcgacccgttcaaggc
 tgtgacgtttgtagcccaaccacgataccgacataatctgggaacaagtatccagcctacgcgttcatctcactacacgagggccagcgacaat
 tctaccgcgactacgaggagtggtcacaacaaggacaagctcaagaacctcatctggatatacagacaacctcggcgaggagcactgacatc
 gtttactcgaacaacgacgagctgatattctgtagaagaggctacgggaagcaagcgggactgataacatcaacctcggctcaagcaaa
 gcgggaagggtgggttactcgtcgaagttcgaggctcgtgcatacagagtagaccggcaacctcggcgctgggtggacaaggtgggtgga
 ctaacggcgctgggtttactcgaaggctcctgccacgaccggccaacggccagtagctgctatcgtttggagctattgcggtgttgggtga

SEQ ID NO: 67

Met Ala Leu Glu Glu Gly Gly Leu Ile Met Gln Ala Phe Tyr Trp Asp Val Pro Met Gly Gly Ile Trp
 Trp Asp Thr Ile Ala Gln Lys Ile Pro Asp Trp Ala Ser Ala Gly Ile Ser Ala Ile Trp Ile Pro Pro Ala
 Ser Lys Gly Met Ser Gly Gly Tyr Ser Met Gly Tyr Asp Pro Tyr Asp Tyr Phe Asp Leu Gly Glu Tyr
 Tyr Gln Lys Gly Thr Val Glu Trp Arg Phe Gly Ser Lys Gln Glu Leu Ile Asn Thr Thr Ala
 His Ala Tyr Gly Met Lys Val Ile Ala Asp Ile Val Ile Asn His Arg Ala Gly Gly Asp Leu Glu Trp
 Asn Pro Phe Val Asn Asp Tyr Thr Trp Thr Asp Phe Ser Lys Val Ala Ser Gly Lys Tyr Thr Ala Asn
 Tyr Leu Asp Phe His Pro Asn Glu Leu His Ala Gly Asp Ser Gly Thr Phe Gly Tyr Pro Asp Ile
 Cys His Asp Lys Ser Trp Asp Gln Tyr Trp Leu Trp Ala Ser Gln Glu Ser Tyr Ala Tyr Leu Arg
 Ser Ile Gly Ile Asp Ala Trp Arg Phe Asp Tyr Val Lys Gly Tyr Ala Pro Trp Val Val Arg Asp Trp
 Leu Asn Trp Trp Gly Tyr Ala Val Gly Glu Tyr Trp Asp Thr Asn Val Asp Ala Val Leu Asn Trp
 Ala Tyr Ser Ser Gly Ala Lys Val Phe Asp Phe Ala Leu Tyr Tyr Lys Met Ser Glu Ala Phe Asp Asn
 Asn Asn Ile Pro Ala Leu Val Asp Ala Leu Arg Tyr Gly Gln Thr Val Ser Arg Asp Pro Phe Lys
 Ala Val Thr Phe Val Ala Asn His Asp Thr Asp Ile Ile Trp Asn Lys Tyr Pro Ala Tyr Ala Phe Ile
 Leu Thr Tyr Glu Gly Gln Pro Thr Ile Phe Tyr Arg Asp Tyr Glu Glu Trp Leu Asn Lys Asp Lys Leu
 Lys Asn Leu Ile Trp Ile His Asp Asn Leu Ala Gly Gly Tyr Thr Asp Ile Val Tyr Tyr Asp Asn Asp
 Glu Leu Ile Phe Val Arg Asn Gly Tyr Gly Ser Lys Pro Gly Leu Ile Thr Tyr Ile Asn Leu Gly Ser Ser
 Lys Leu Gly Arg Trp Val Tyr Pro Lys Phe Ala Gly Ser Cys Ile His Glu Tyr Thr Gly Asn Leu
 Gly Gly Trp Val Asp Lys Trp Val Asp Ser Ser Gly Trp Val Tyr Leu Glu Ala Pro Ala His Asp Pro
 Ala Asn Gly Gln Tyr Gly Tyr Ser Val Trp Ser Tyr Cys Gly Val Gly

SEQ ID NO: 68

atgaagcctcggaactcctctgtcttggctcgtagctctatctctcggggctctacgccagcccgccggggcgcccaagtacctggagc
 tcgaagaggcgccgctcataatgcaggcgttctactgggacgttgccttcaggagggaataatgggtgggacacaatcggcagaagataccgga
 ggtgctacgtccgggaatctcgcgaattatggttcccccggcgagcaaggcgtatggcgccgcttatcttgatgggtctacgacctacgactt
 ctttgacctcgggtgagtacgaccagaagggaacggtagagacgcgttttggctccaagcaggagctcgtgaaactgataaacaccgccacg
 cctacgctcaaggtgctacgcagacatagtaataccaccgcgcggaggagacacttggaggaaacctctgcaatgactacaacctgga
 cggacttctcgaaggtctcgtctggcaagtlacacggccaactacctcgacttccaccccaagggtcaaggtgctgcgacgaggcgaccttgg
 gagggctcccgacatatgccacgagaagagctggggaccaggtactggctctggggcgagcaacgagagctacgccgctactcagggaca
 tgcggcttgacgcatggcgttcgactcgtcaagggtcctcggagcgtgggtcgtgcaagggtgctgctggactgttggggagggctggcgt
 cggggagtagtgggacacaacagctgtgacgtgtcacaatggcctatctgagcgatgcaaaaagtcttcgacttcccgtctactacaagatg
 gacggcgctttagcaacaagaacattcccgactcgtcgcaggccctcaagaacggggcgccacagctgacgacggcagccgttttaaggccgt
 aacctctgttcaaacacgacacgagcagcatataattggaaacagtagccggcctacggcttcatctcaacctcagagggccagccgacgataatc
 taccgcgactacgaggatggctcacaaggacagcgttcaagaacctcatctggatacacgaccacctcggcggtggaagcaccgacatatg

tctactacgataacgatgaactcatcttcgtcaggaacggctacggggacaaagccggggctataacctacatcaacctaggtcgcagcaagg
 ccgggagtggtgtctacgttcggaagtccggggagcgtgcatccacgagtacaccggcaacctcggcggtgggtggacaagtgggtgga
 ctcaagcgggtgggtgtacctcgaggccctgccacgaccggccaacggctattacggctactccgtctggagctactcgggggtggct
 ga

SEQ ID NO: 69

Met Lys Pro Ala Lys Leu Leu Val Phe Val Leu Val Val Ser Ile Leu Ala Gly Leu Tyr Ala Gln Pro
 Ala Gly Ala Ala Lys Tyr Leu Glu Leu Glu Glu Gly Gly Val Ile Met Gln Ala Phe Tyr Trp Asp Val
 Pro Ser Gly Gly Ile Trp Trp Asp Thr Ile Arg Gln Lys Ile Pro Glu Trp Tyr Asp Ala Gly Ile Ser Ala
 Ile Trp Ile Pro Pro Ala Ser Lys Gly Met Gly Gly Ala Tyr Ser Met Gly Tyr Asp Pro Tyr Asp Phe
 Phe Asp Leu Gly Glu Tyr Asp Gln Lys Gly Thr Val Glu Thr Arg Phe Gly Ser Lys Gln Glu Leu Val
 Asn Met Ile Asn Thr Ala His Ala Tyr Gly Ile Lys Val Ile Ala Asp Ile Val Ile Asn His Arg Ala Gly
 Gly Asp Leu Glu Trp Asn Pro Phe Val Asn Asp Tyr Thr Trp Thr Asp Phe Ser Lys Val Ala Ser Gly
 Lys Tyr Thr Ala Asn Tyr Leu Asp Phe His Pro Asn Glu Val Lys Cys Cys Asp Glu Gly Thr Phe
 Gly Gly Phe Pro Asp Ile Ala His Glu Lys Ser Trp Asp Gln Tyr Trp Leu Trp Ala Ser Asn Glu Ser
 Tyr Ala Ala Tyr Leu Arg Ser Ile Gly Val Asp Ala Trp Arg Phe Asp Tyr Val Lys Gly Tyr Gly Ala
 Trp Val Val Lys Asp Trp Leu Asp Trp Trp Gly Gly Trp Ala Val Gly Glu Tyr Trp Asp Thr Asn Val
 Asp Ala Leu Leu Asn Trp Ala Tyr Ser Ser Asp Ala Lys Val Phe Asp Phe Pro Leu Tyr Tyr Lys Met
 Asp Ala Ala Phe Asp Asn Lys Asn Ile Pro Ala Leu Val Glu Ala Leu Lys Asn Gly Gly Thr Val Val
 Ser Arg Asp Pro Phe Lys Ala Val Thr Phe Val Ala Asn His Asp Thr Asp Ile Ile Trp Asn Lys Tyr
 Pro Ala Tyr Ala Phe Ile Leu Thr Tyr Glu Gly Gln Pro Thr Ile Phe Tyr Arg Asp Tyr Glu Glu Trp
 Leu Asn Lys Asp Arg Leu Lys Asn Leu Ile Trp Ile His Asp His Leu Ala Gly Gly Ser Thr Asp Ile
 Val Tyr Tyr Asp Asn Asp Glu Leu Ile Phe Val Arg Asn Gly Tyr Gly Asp Lys Pro Gly Leu Ile Thr
 Tyr Ile Asn Leu Gly Ser Ser Lys Ala Gly Arg Trp Val Tyr Val Pro Lys Phe Ala Gly Ala Cys Ile
 His Glu Tyr Thr Gly Asn Leu Gly Gly Trp Val Asp Lys Trp Val Asp Ser Ser Gly Trp Val Tyr Leu
 Glu Ala Pro Ala His Asp Pro Ala Asn Gly Tyr Tyr Gly Tyr Ser Val Trp Ser Tyr Cys Gly Val Gly

WEIGHT AVERAGED VS NUMBER AVERAGED Molecular Weight Determination of Amylases light scattering – intrinsic viscosity – refractive index

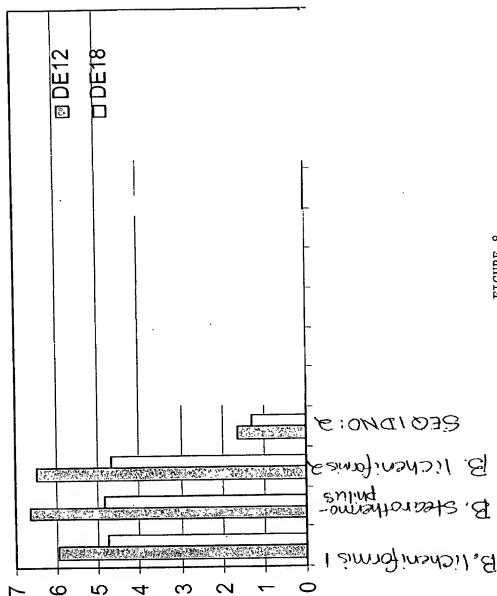


FIGURE 8